# A Rare Coexistence in an Infertile Woman: Ligneous Disease in Cervix and Conjunctiva

**Murat ÖZEKİNCİ[1], Mehmet SAKINCI[1], Cem Y. SANHAL[1], Elif PESTERELİ[2], Münire ERMAN AKAR[1] İnanç MENDİLCİOĞLU[1]**

*Antalya, Turkey*

Ligneous disease involving the female genital tract is a very rare entity. We present a case of a patient who admitted to our clinic with the complaints of dyspareunia, postcoital bleeding and infertility. On speculum examination a nulliparous cervix with white plaques and hemorrhagic lesions around ostium were seen. Multiple samples were taken from the cervical lesions and histopathologic diagnosis was ligneous cervicitis and low grade cervical intraepithelial lesion. According to the characteristics of the disease, a conjunctival examination and biopsy were performed. Similar microscopic features in cervix were also determined and reported as ligneous conjunctivitis. She used cyclosporine and oral contraceptives in the following six months but there was no improvement on either ocular or genital lesions.

**Key Words:** Ligneous, Infertility, Cervicitis, Conjunctivitis

Gynecol Obstet Reprod Med 2013;19:44-46

## Introduction

Ligneous disease is a rare systemic disorder with chronic woody pseudomembranous inflammation which can come up with the lesions on conjunctiva, genital tract, oral mucosa and ear.[1,2] Its aetiology has not been completely determined and also it is refractory to all forms of therapy with a predisposition to recurrence.[2] It is diagnosed histopathologically with the detection of amorphous deposits including material with fibrin and eosinophilic amyloid-like subepithelial sediments.[3] Herein we report an infertile patient presenting with dyspareunia and postcoital bleeding and diagnosed as ligneous cervicitis and conjunctivitis.

## Case Report

A 36-year-old woman was admitted to our clinic with the complaints of dyspareunia and postcoital bleeding. She had been married for two years and could not become pregnant despite proper and unprotected intercourse. Her personal and familial past medical history was unremarkable except a conjunctival lesion which was considered as pyogenic granuloma and offered excisional biopsy two years ago. She was not taking any medication and had not used an intrauterine device for contraception.

On speculum examination a nulliparous cervix with white plaques and hemorrhagic lesions around ostium were seen. Vaginal cavity was short and narrow, however inflamation were detected around fornices (Figure 1). Uterus, ovaries and adnexa were normal in size on bimanual examination. Transvaginal ultrasonography revealed a 9 mm, regular endometrium and natural appearing adnexa. Follicle-stimulating hormone, luteinizing hormone, estradiol, thyroid-stimulating hormone and prolactin levels on the third day of the menstrual cycle were normal. There were not any abnormalities in neither her complete blood cell count, liver, kidney and thyroid function tests, serum glucose level nor her husband's spermiogram parameters.

Having informed the patient about the possibility of a cervical malignancy, a colposcopic biopsy under anestesia was performed. There were not any suspicious colposcopic features with acetic acide, however multiple samples were taken from the cervical lesions which were mentioned above. Microscopic examination revealed massive deposition of amorphous, eosinophilic, hyaline and fibrin material with the loss of surface epithelium (Figure 2). Final histopathologic diagnosis was ligneous cervicitis and low grade cervical intraepithelial lesion.

*[1] Department of Obstetrics and Gynecology Akdeniz University Faculty of Medicine, Antalya*
*[2] Department of Pathology, Akdeniz University Faculty of Medicine, Antalya*

*Address of Correspondence:* *Cem Yaşar Sanhal*
*Akdeniz University Medical Faculty,*
*Obstetrics and Gynecology Department,*
*Antalya,*
*cemsanhal@yahoo.com*

*Submitted for Publication:* *04. 09. 2012*
*Accepted for Publication:* *19. 12. 2012*

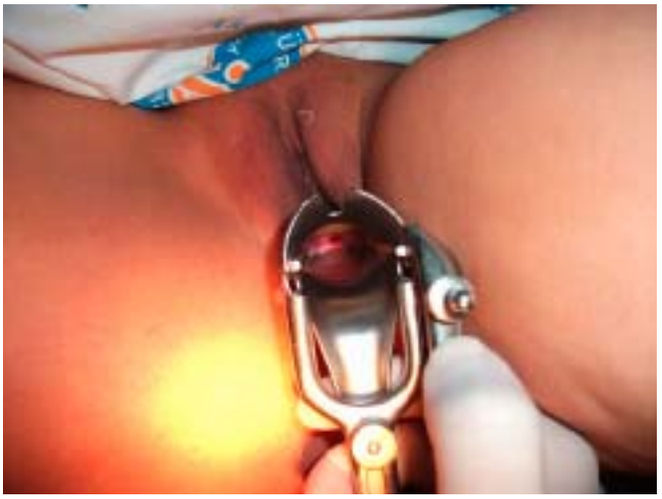

*Figure 1: Short and narrow vaginal cavity.*

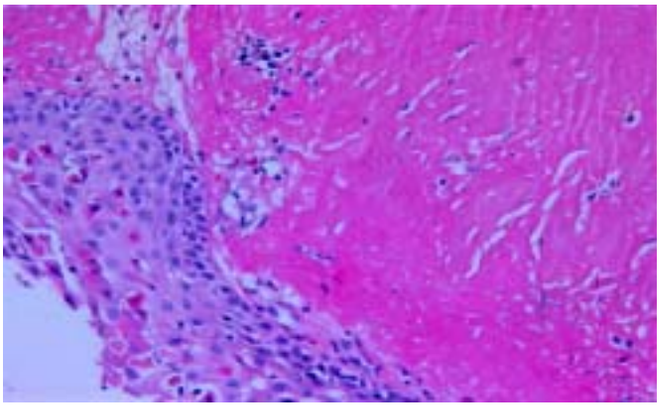

*Figure 2. Subepithelial depositions of amorphous, eosinophilic material (hematoxylin-eosin, magnification x 200).*

Thereafter, a conjunctival examination and biopsy were taken by ophtalmology department from the lesion which was formerly diagnosed as pyogenic granuloma. Similar microscopic features in cervix were also determined and reported as ligneous conjunctivitis. Meanwhile, patient was consultated with heamatology department. Additional parameters including prothrombin time, fibrinogen, D-dimer, activated partial thromboplastin time, antithrombin III activity, protein C activity, protein S activity and activated protein C resistance tests were conducted and found normal. She was heterozygote for plasminogen activator inhibitor-1 (PAI-1) gene mutation. Also, she was offered to perform other tests like plasminogen functional activity, tissue plasminogen activity and plasminogen activator inhibitor level in another tertiary center but she refused. Finally, she was receiving cyclosporine and combined oral contraceptives for 6 months but there was no progress either on her ocular lesions or genitalia.

## Discussion

The nomenclature of 'ligneous' disease was first introduced by Borel in 1934.[4] Ocular mucosa is the most common site of involvement and there is adequate ophthalmologic data about diagnosis and management.[5] Conversely the number of cases which have genital lesions is far less than those having ocular disease. In 2008, Altinkaya et al. declared that only 18 cases on ligneous inflammation involving the female genital tract have been published in English literature.[6]

It was formerly reported that patients with ligneous cervicitis generally presented with fertility problems and dysmenorrhoea in association with pelvic pain, postcoital bleeding and offensive vaginal discharge.[7] Our patient also suffered from postcoital bleeding and infertility. The major causes of fertility problems in this group of patients were defined as anatomical deposition of fibrin and associated inflammation in the female genital tract and reduced ovulation efficiency.[8]

Ligneous disease were thought to be an autosomal recessive transmitted entity which results in absent or very low plasminogen levels.[9] The impaired fibrin degradation in patients with any kind of inadequate plasmin activity (deficiency of plasminogen or t-PA, excess of PAI or plasmin activator inhibitör, lipoprotein (a) abnormalities) results in the depositions in mucosal sites secondary to previous injury or inflammation.[10]

Unfortunately, treatment choices for ligneous diseases are limited and no successful recommendations have been defined.[11] Only some case reports indicate the efficacy of oral contraceptives and topical and/or systemic plasmin or plasminogen.[12,13] Nevertheless, this was not of significance in our case.

In conclusion, although it is a rare entity, ligneous disease should be kept in mind at the time of evaluating a patient with a cervical or ocular lesion, especially in the infertile woman population. The improbability of precise treatment and worsening at lesions with recurrent biopsies necessitates the awareness of the disease. Further studies investigating the optimum therapeutic regimens and establishing certain algorithyms are required for the management of ocular and genital ligneous disease.

## İnfertil Kadında Nadir Bir Birliktelik: Serviks ve Konjunktivada Lignöz Hastalık

Dişi genital yolunu tutan lignöz hastalık çok nadir bir durumdur. Bu olgu sunumunda disparoni, postkoital kanama ve infertilite şikayetleriyle kliniğimize başvuran bir hastayı bildirmekteyiz. Spekulum muayenesinde ostium etrafında beyaz plaklar ve kanamalı lezyonlar olan nulliparöz bir serviks saptandı. Servikal lezyonlardan çoklu biyopsiler yapıldı. Histopatolojik tanı lignöz servisit ve düşük dereceli intraepitelyal lezyon şeklinde geldi. Hastalığın özellikleri göz önünde bulundurularak, konjuktiva

muayenesi ve biyopsi yapıldı. Servikal lezyonların mikroskobik özelliklerine benzer bulgular saptandı ve lignöz konjuktivit olarak raporlandı. Takip eden 6 ayda siklosporin ve oral kontraseptif kullanan hastanın oküler ve genital lezyonlarında bir gelişme saptanmadı.

**Anahtar Kelimeler:** Lignöz, İnfertilite, Servisit, Konjunktivit

## References

1. Pantanowitz L, Bauer K, Tefs K, Schuster V, Balogh K, Pilch BZ, et al. Ligneous (pseudomembranous) inflammation involving the female genital tract associated with type-1 plasminogen deficiency. Int J Gynecol Pathol 2005;23:292-5.
2. Deen S, Duncan TJ, Hammond RH. Ligneous cervicitis; is it the emperor's new clothes? Case report and different analysis of aetiology. Histopathology 2006;49:198-9.
3. Pantanowitz L, Fraser JL. Ligneous change of the female genital tract. Fertil Steril 2002;78:1123-4.
4. Borel MG. Un nouveau syndrome palpebral. Bull Soc Ophthalmol Fr 1933; 46:168-80.
5. Schuster V, Seregard S. Ligneous conjunctivitis. Surv Ophthalmol 2003;48:369-88.
6. Altinkaya SO, Uzunlar O, Talas BB, Ozat M, Bilge U. Ligneous cervicovaginitis. Taiwan J Obstet Gynecol 2008;47:363-6.
7. Pantanowitz L. Ligneous cervicitis. BJOG 2004;111: 635-6.
8. Ny A, Leonardsson G, Hagglund AC, Hägglöf P, Ploplis VA, Carmeliet P, et al. Ovulation in plasminogen deficient mice. Endocrinology 1999;140:5030- 5.
9. Bateman JB, Pettit TH, Isenberg SJ, Simons KB. Ligneous conjunctivitis: an autosomal recessive disorder. J Pediatr Ophthalmol Strabismus 1986;23:137-40.
10. Ramsby ML, Donshik PC, Makowski GS. Ligneous conjunctivitis: Biochemical evidence for hypofibrinolysis. Inflammation 2000;24:45-71.
11. Rubin A, Buck D, Macdonald MR. Ligneous conjunctivitis involving the cervix. Case report. Br J Obstet Gynaecol 1989;96:1228-30.
12. Heidemann DG, Williams GA, Hartzer M, Ohanian A, Citron ME. Treatment of ligneous conjunctivitis with topical plasmin and topical plasminogen. Cornea 2003;22: 760-2.
13. Teresa Sartori M, Saggiorato G, Pellati D, Casonato A, Spiezia L, Pontara E, et al. Contraceptive pills induce an improvement in congenital hypoplasminogenemia in two unrelated patients with ligneous conjunctivitis. Thromb Haemost 2003;90:86-91